

What is claimed is:

1. A correlator which figures out a correlation between an input signal which is a pulse train and a predetermined time-series signal, comprising:

a multiplier for multiplying the input signal by the predetermined time-series signal;

an integrator A for integrating an output (i) from the multiplier;

a quantizer for quantizing an output (ii) from the integrator; and

a negative feedback path for negatively feeding an output (iii) from the quantizer back to the integrator A.

2. The correlator as defined in claim 1, further comprising:

an adder which adds the output (i) to the output (iii) having passed through the negative feedback path, and supplies the outputs (i) and (iii), which have been added to each other, to the integrator A.

3. The correlator as defined in claim 1, further comprising:

an integrator B for integrating the output (iii).

4. The correlator as defined in claim 1, further comprising:

a converter provided on the negative feedback path, which converts a digital signal to an analog signal.

5. The correlator as defined in claim 1, wherein, the input signal is an impulse train which has been subjected to pulse position modulation in accordance with digital data.

6. The correlator as defined in claim 5, wherein, the predetermined time-series signal is generated in accordance with impulses of the impulse train, the impulses being different from each other.

7. The correlator as defined in claim 1, wherein, the input signal is a pulse train which has been subjected to BPSK modulation in accordance with digital data.

8. The correlator as defined in claim 7, wherein, the predetermined time-series signal is composed of rectangular waves corresponding to the pulse train.

9. A parallel correlator, comprising a plurality of correlators being parallel to each other, each of the

plurality of correlators, which figures out a correlation between an input signal which is a pulse train and a predetermined time-series signal, including:

- a multiplier for multiplying the predetermined time-series signal by the input signal;

- an integrator A for integrating an output (i) from the multiplier;

- a quantizer for quantizing an output (ii) from the integrator; and

- a negative feedback path for negatively feeding an output (iii) from the quantizer back to the integrator A.

10. The parallel correlator as defined in claim 9, further comprising a delay circuit for regulating a clock supplied to the plurality of correlators.

11. A correlator which figures out a correlation between an input signal which is a pulse train and a predetermined time-series signal, comprising:

- a multiplier for multiplying the input signal by the predetermined time-series signal;

- a first integrator for integrating an output (a) from the multiplier;

- a sampling circuit for sampling an output (b) from the first integrator;

a second integrator for integrating an output (c) from the sampling circuit;

a quantizer for quantizing an output (d) from the second integrator; and

a negative feedback path for negatively feeding an output (e) from the quantizer back to the second integrator.

12. The correlator as defined in claim 11, wherein, the first integrator is an integrator which attenuates at a certain time constant.

13. The correlator as defined in claim 11, further comprising an adder which adds the output (c) to the output (e) having passed through the negative feedback path, and supplies the outputs (c) and (e), which have been added to each other, to the second integrator.

14. The correlator as defined in claim 11, further comprising a third integrator for integrating the output (e).

15. The correlator as defined in claim 11, further comprising a converter provided on the negative feedback path, which converts a digital signal to an analog signal.

16. The correlator as defined in claim 11, wherein, the input signal is an impulse train which has been subjected to pulse position modulation in accordance with digital data.

17. The correlator as defined in claim 16, wherein, the predetermined time-series signal is generated in accordance with impulses of the impulse train, the impulses being different from each other.

18. The correlator as defined in claim 11, wherein, the input signal is a pulse train which has been subjected to BPSK modulation in accordance with digital data.

19. The correlator as defined in claim 18, wherein, the predetermined time-series signal is composed of rectangular waves corresponding to the pulse train.

20. A receiver, comprising a correlator which figures out a correlation between an input signal which is a pulse train and a predetermined time-series signal, the correlator including:

a multiplier for multiplying the predetermined time-series signal by the input signal;

an integrator A for integrating an output (i) from the multiplier;

a quantizer for quantizing an output (ii) from the integrator; and

a negative feedback path for negatively feeding an output (iii) from the quantizer back to the integrator A.